REMARKS

By this amendment, claims 1-3 and 5-7 remain pending in this application. Claims 4 and 8-10 have been canceled. Claims 1, 5 and 7 have been amended. No new matter has been added. Applicants respectfully request reconsideration in view of the above amendments and the following remarks.

Claims 1-7 are rejected under 35 U.S.C. §103(a) as being obvious over Brusic et al. (U.S. Pat. No. 6,527,622) in view of Singh (U.S. Pat. No. 6,866,793). Applicants respectfully disagree.

The composition of claim 1 requires, an aqueous composition for polishing silica and silicon nitride on a semiconductor. In other words, the composition of claim 1 is for polishing silica and silicon nitride in shallow trench isolation ("STI") processes. As discussed in the Applicant's specification on page 1, in the STI technique, the first step is the formation of a plurality of trenches at predefined locations in the substrate, usually by anisotropic etching. Next, silica is deposited into each of these trenches. The silica is then polished by chemical mechanical polishing, down to the silicon nitride (stop layer) to form the STI structure. To achieve efficient polishing, the polishing slurry must provide a high selectivity involving the removal rate of silica relative to silicon nitride ("selectivity").

The composition and method of the present invention provide unexpected selectivity for removing silica relative to silicon nitride. The composition advantageously relies upon a selectivity enhancer to selectively polish silica relative to silicon nitride for shallow trench isolation processes. In particular, the composition comprises a zwitterionic compound to selectively polish silica relative to silicon nitride, at the pH of the application. For example, as illustrated in Table 1 of the Applicant's specification, the increased concentration of N,N,N-trimethylammonioacetate provided improved selectivity values. In particular, Test 1

provided a selectivity of 66 compared to 40 for Test A. The selectivity was markedly improved from that of Test A, which did not contain any N,N,N-trimethylammonioacetate.

In contrast to the invention of claim 1, the base reference, Brusic, has absolutely nothing to do with a slurry for use in chemical mechanical polishing during STI processes. In other words, Brusic has nothing to do with polishing silica relative to silicon nitride. For example, Brusic concerns an aqueous dispersion for use in polishing noble metals, such as, platinum, iridium, rhenium, ruthenium and rhodium (see e.g., cols. 7-19, including, all the Examples). The dispersion of Brusic utilizes a polishing additive (e.g., diketones, diketonates, urea compounds, heterocyclic nitrogen-containing compounds, etc.) to interact with the noble metal surface and to promote its dissolution during chemical-mechanical polishing (see e.g., paragraph bridging cols. 3 and 4). Brusic is completely void of any discussion relating to a composition for use in polishing silica and silicon nitride during STI processes, as required in claim 1.

Apparently, the Examiner believes that a slurry for one application can simply be applied or "dropped-in" to another application. To that end, the Applicants strongly assert that there is no motivation for utilizing the dispersion of Brusic in STI processes. Moreover, there is absolutely no motivation for combining the disclosure of Brusic with that of Singh, and Applicants assert that any attempt to do so is simply hindsight reasoning by the Examiner. In fact, due to the specific requirements and characteristics of each application (e.g., polishing copper, polysilicon, hard disk, etc.), it is extremely unlikely that a slurry for one application would ever be appropriate for another application without some modification. For example, the aqueous dispersion of Brusic requires an oxidizer to dissolve or oxidize the noble metals. If an oxidizer was utilized in the present slurry, it would adversely react with the electro-chemical charge of the ceria abrasive and may destabilize the slurry. In other words, the present slurry with an oxidizer would not work for its intended use. Hence, no one of common skill in the art

would simply substitute a, for example, slurry for polishing noble metals, for polishing silica and silicon nitride. Accordingly, Applicants submit that the rejection of claim 1 is overcome and respectfully request the Examiner for withdrawal of the same.

Similarly, claim 7 is directed to a composition for polishing silica and silicon nitride on a semiconductor wafer. Accordingly, claim 7 should be allowable for at least the reasons as stated above for claim 1. In addition, claims 2, 3, 5 and 6 depend from claim 1 and should be allowable along with claim 1 and for its own unique combination of features that are neither taught or suggested by the cited prior art.

In view of the foregoing, Applicants submit that all of the currently pending claims are now in immediate condition for allowance and respectfully request the Examiner to withdraw the outstanding rejections of the claims and to pass the current application to issue. If the Examiner has any questions or comments, the Examiner is cordially invited to directly contact the below-listed attorney at (302)283-2137.

Respectfully submitted,

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